

AMENDED CLAIMS:

1 (twice amended) A method of estimating the volume of a three-dimensional object having a known contour comprising the steps of:

(a) defining a given number of base points constituting a first three dimensional [shaped] shape defined by facets whose vertices are the base points;

(b) defining each facet of the first shape by three segments wherein each segment [being] is common to two adjacent facets;

(c) creating second rank points adapted to the contour of the object by dividing [the] the segments so as to constitute a second three-dimensional shape closer to the contour of the object than the first shape, the creation of each second rank point resulting in the creation of at least two new facets and at least three new segments;

(d) defining third or more rank points adapted to the contour of the object by iteratively dividing each new segment into subsegments, so as to constitute a third or more three-dimensional shape closer to the contour of the object than the second three-dimensional shape, the creation of the third or more rank points resulting in the creation of at least two additional new facets and at least three additional new segments; and

(e) calculating the volume of the third or more three-dimensional shape.

2 (amended). The method according to claim 1 wherein the contour [volume] of the object is known from [comprises] images taken along parallel sections.

3 (amended) The method according to claim 1, wherein a plurality of images [films is] provides [treated to supply] a description of the three-dimensional contour [volume].

7 (amended). The method according to claim 1, wherein the position of each of the second rank [point is proposed to the operator as] point is a function of the position of the first two adjacent facets [points].

8 (amended). The method according to claim 2, wherein the position of each second rank point is [proposed to the operator as] a function of the position of the first two adjacent facets [points].

9 (amended). The method according to claim 3, wherein the position of each second rank point is [proposed to the operator as] a function of the position of the first two adjacent facets [points].

10 (amended). The method according to claim 4, wherein the position of each second rank point is [proposed to the operator as] a function of the position of the first two adjacent facets [points].

11 (amended). The method according to claim 5, wherein the position of each second rank point is [proposed to the operator as] a function of the position of the first two adjacent facets [points].

12 (amended). The method according to claim 6, wherein the position of each second rank point is [proposed to the operator as] a function of the position of the first two adjacent facets [points].

13 (amended). The method according to claim 7, wherein the position of each second rank point is [proposed to the operator as] a function of the position of the first two adjacent facets [points].

15 (amended). The method according to claim 1, wherein said given number of [six first] base points [are defined] is six.

17 (amended). The method according to claim 1, wherein any of the points [point of] of the three-dimensional shapes can be modified.

CLAIMS:

1. A method of estimating the volume of a three-dimensional object having a known contour comprising the steps of:

(a) defining a given number of base points constituting a first three dimensional shape defined by facets whose vertices are the base points;

C1 (b) defining each facet of the first shape by three segments wherein each segment is common to two adjacent facets;

(c) creating second rank points adapted to the contour of the object by dividing the segments so as to constitute a second three-dimensional shape closer to the contour of the object than the first shape, the creation of each second rank point resulting in the creation of at least two new facets and at least three new segments;

(d) defining third or more rank points adapted to the contour of the object by iteratively dividing each new segment into subsegments, so as to constitute a third or more three-dimensional shape closer to the contour of the object than the second three-dimensional shape, the creation of the third or more rank points resulting in the creation of at least two additional new facets and at least three additional new segments; and

(e) calculating the volume of the third or more three-dimensional shape.

2. The method according to claim 1 wherein the contour of the object is known from images taken along parallel sections.

3. The method according to claim 1, wherein a plurality of images provides a description of the three-dimensional contour.

C2 7. The method according to claim 1, wherein the position of each of the second rank point is a function of the position of the first two adjacent facets.

8. The method according to claim 2, wherein the position of each second rank point is a function of the position of the first two adjacent facets.

C3
cont.
9. The method according to claim 3, wherein the position of each second rank point is a function of the position of the first two adjacent facets.

10. The method according to claim 4, wherein the position of each second rank point is a function of the position of the first two adjacent facets.

11. The method according to claim 5, wherein the position of each second rank point is a function of the position of the first two adjacent facets.

12. The method according to claim 6, wherein the position of each second rank point is a function of the position of the first two adjacent facets.

13. The method according to claim 7, wherein the position of each second rank point is a function of the position of the first two adjacent facets.

14. The method according to claim 1, wherein the segments are divided into further additional subsegments until the change in volume for each further iteration resulting from a given division reaches a volume according to the desire of the operator or as defined by preset conditions.

C3
15. The method according to claim 1, wherein said given number of base points is six.

C4
17. The method according to claim 1, wherein any of the points of the three-dimensional shapes can be modified.

18. The method according to claim 1, wherein the points are defined manually.

19. The method according to claim 1 wherein there is a change in the calculated volume which defines a threshold below which the iterative division is stopped.

20. The method according to claim 1 wherein each segment or subsegment is divided by a perpendicular to the segment or subsegment.